

UNIVERSITY *of* MISSOURI

SINCLAIR SCHOOL OF NURSING

MISSOURI QUALITY INITIATIVE FOR NURSING HOMES (MOQI)

MEDICAL DIRECTOR COMMUNIQUE - OCTOBER 2014

Responsible Treatment of Urinary Tract Infections

Urinary tract infections (UTI) are one of the most common infections in long-term care (LTC) facilities and the most common cause of bacterial infection related hospitalizations. Accurate diagnosis of UTI in LTC patients is difficult because of frequent non-specific presentations, communication barriers, chronic genitourinary symptoms, and comorbidities. Equivocal and/or asymptomatic cases of possible UTIs are often treated in the LTC setting. Antibiotic use for asymptomatic bacteriuria is associated with recurrent infections with multidrug-resistant (MDR) bacteria and does not change survival or chronic genitourinary symptoms. Furthermore inappropriate use can delay accurate diagnosis of change of condition and development of *C. Difficile* colitis.

Dipstick urine testing is essentially 100% accurate for ruling out a urinary tract infection, but is not that accurate for ruling one in. Asymptomatic bacteriuria is common, and even pyuria is not diagnostic of a UTI in the absence of any clinical symptoms. Because of the uncertainty of the meaning of bacteria and pyuria in urine, several expert panels have derived evidence based criteria that are now used as the best available evidence for accurate diagnosis of UTIs. The McGeer criteria are the most widely accepted and even form the backbone of nursing home surveyor guidance. These criteria have had minor modifications as noted below, are not perfect and still require the judgment of the practitioner, but they do form a sound medical basis for treating or not treating an infection.

McGeer criteria were revised in 2013 to make them more sensitive and specific. All UTIs must have symptoms that are new or acutely worse, and alternative non-infectious causes should be considered. No infection can be based on a single piece of evidence (such as a UA), but need to be viewed in context. Fever is now defined as 2 degrees above individual baseline or $> 100^{\circ}\text{F}$ or repeated readings $>99^{\circ}\text{F}$. Leukocytosis is now defined as $> 14,000 \text{ wbc}/\text{mm}^3$ or left shift (6% bands or $\geq 1500 \text{ bands}/\text{mm}^3$). Worsening of mental status can be quantitated. Mental decline should be acute onset and fluctuating course coupled with inattention, and either disorganized thought or altered level of consciousness. Acute functional decline requires a 4 point change in MDS derived ADLs.

Even with the McGeer criteria the sensitivity and specificity of diagnosing true clinical infection can be difficult. Recent studies have suggested that the three most important clinical signs are dysuria, change in character of urine, and change in mental status.



A positive urine culture with pertinent clinical symptoms is the gold standard for diagnosing a true infection. A positive culture from a Foley or ileostomy however is never an infection without one of the following strict criteria being met:

- 1) Fever, rigors, OR new onset hypotension with NO alternate site of infection;
- 2) Either acute change MS OR acute functional decline with NO alternate diagnosis AND elevated WBC;
- 3) New onset suprapubic or CVA pain;
- 4) Purulent discharge around catheter or acute pain, swelling, tenderness in testes, epididymis, or prostate.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles A. Crecelius". The signature is fluid and cursive, with the first name "Charles" being the most prominent.

Charles A. Crecelius, MD, PhD, CMD
Project Medical Director, Missouri Quality Initiative (MOQI) for Nursing Homes